

A SYSTEM AND A METHOD FOR COMMUNICATION BETWEEN AN ICE AND A PRODUCTION MICROCONTROLLER WHILE IN A HALT STATE

5 ABSTRACT OF THE DISCLOSURE

A system where a production microcontroller is partially copied in a FPGA of
an ICE to form a virtual microcontroller. The virtual microcontroller and the
production microcontroller simultaneously and independently run a microcontroller
code to be debugged at a high frequency. The debugging logic can substantially
reside in the ICE and the ICE can performs all debugging functions. The debug
interface, residing in the production microcontroller, can enable the production
microcontroller to communicate with the ICE in low frequencies. The production
microcontroller may request the ICE to lower its frequency when the production
microcontroller encounters a halt due to outside events. A user may command
resumption of the operation of both the production microcontroller and the virtual
microcontroller when debugging of the codes is completed.